

REMARKS/ARGUMENTS

Claims 1-40 are pending in this application. Upon entry of the amendment, claims 5, 21, and 38 will have been amended. All pending claims have been rejected. Claims 1-4, 7, 11, 12, 17, 18, 19, 20, 24, 25, 26, 28, and 31 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,480,971 (Matsumoto). Claims 32, 33, 35, 39 and 40 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,537,585 (Blickenstaff). Claims 5-6, 8-10, 13-16, 21-23, 27, 29, 30, 34, 36-38 have been rejected under various combinations of Matsumoto, Blickenstaff, Yamamoto (U.S. Patent No. 6,493,787) and Kaneko (U.S. Patent No. 5,802,020), as set forth in the Office Action.

Applicants respectfully submit that each of the claims recites features that are neither taught nor suggested by the prior art, and that the Examiner has overlooked substantial differences between the features recited in the claims and the prior art of record. What follows is a summary of the present application and the cited prior art, and a claim-by-claim explanation as to why the claims recited features that are not taught, suggested, or made obvious by, the prior art.

SUMMARY OF THE PRESENT APPLICATION AND THE PRIOR ART

The present application is directed to systems and methods for migrating data (e.g., old files) to secondary media (e.g., tapes, optical disks, etc.). The invention supports the migration of data to secondary media by managing the use of the media in a way that takes into account the availability of resources used in the migration process, as well as the need to migrate the data in a way that supports efficient recall of the migrated data in the future. For example, in selecting media to which to migrate data, the systems and methods of the

invention may take into account such factors as: whether a given medium is double-sided, whether the first side of a double-sided medium is full, whether a given medium is currently in use, the amount of time that it takes for an in-use medium to become available, whether a given medium is robotically accessible, the amount of time that it will take to mount a non-robotically accessible medium, and the number of drives that are concurrently available for writing. (See Application, pages 21-30 and FIGS. 7-9.) As disclosed in the application, media may be classified based on the above-described factors, and then a medium may be selected based on which classification the medium falls into. (See Application, Table 1 at p. 25, lines 1-17.) When a medium has been selected according to factors such as those mentioned above, then data may be migrated to the selected medium.

The following is a brief summary of the prior art that the Examiner has applied to the claims of the present application.

Matsumoto

Matsumoto is directed to the use of optical disks in a "data striping" process. Data striping is a process that breaks up serial data so that it can be recorded and recalled on multiple media that can be written and read simultaneously. (See Matsumoto, col. 1, ll. 16-67.) Matsumoto is addressed to a particular problem that arises when optical disks are used in a data striping scheme: optical disks may have defects, and data that cannot be written to a defective portion is written to a substitute sector; when the substitute sector is filled, it is no longer possible to write data to the disk, even if the disk has additional free space. Thus, if one disk's substitute sector fills up, the entire data striping process must be halted or

suspended. (See Matsumoto, col. 2, l. 45 through col. 3, l. 4.) Matsumoto addresses this problem by allowing other regions of a disk to supplement the space provided by the substitute sector. Thus, the effective capacity of the substitute sector is increased, making it less likely that a disk will become unusable during the process of data striping. (Matsumoto, col. 4, ll. 18-23.)

Blickenstaff

Blickenstaff is directed to the management of data storage in a networked environment. Blickenstaff describes a data storage management system comprising a plurality of virtual file subsystems. (Blickenstaff, col. 2, l. 22-24.) Blickenstaff describes paradigms to decide which files should be migrated from primary storage to secondary storage (col. 2, ll. 61-67). Additionally, the storage management system is organized in layers, and files are migrated from layer to layer depending on such factors as their activity level, content, and the amount of available storage space within a given layer (col. 3, ll. 1-6).

Yamamoto

Yamamoto is directed to a method of accessing plate shaped memories (e.g., compact discs). Yamamoto addresses the problem of allowing successive plate-shaped memories to be continuously accessed. Thus, if a song is stored across two different discs, a listener would hear a gap in the song while one disc is dismounted and the other disk is mounted (col. 1, ll. 48-57). Yamamoto notes that the prior art allows music to be reproduced continuously in the above-described disc-change situation, by means of buffering the end of the first disk (and

reproducing the music out of the buffer) while the disk is being changed (col. 1, ll. 58-65).

Yamamoto purports to provide system whereby music recorded across two disks can be reproduced without the use of a buffer, and without interruption (col. 2, ll. 57-59).

Kaneko

Kaneko is directed to a device for recording and playback of optical disks. Kaneko's device includes a magazine that holds a plurality of optical disks, and a conveyor unit that extracts optical disks from the magazine and inserts the extracted disk into an optical disk drive. (Kaneko, col. 7, ll. 10-25).

THE SECTION 102 REJECTIONS

Claims 1-4, 7, 11, 12, 17-20, 24-26, 28, 31-33, 35, 39 and 40 have been rejected under 35 U.S.C. § 102 as being anticipated by either Matsumoto or Blickenstaff. Applicants set forth below why claims 1, 4, 12, 17, 18, 20, 25, 26, 32, 39, and 40 are patentable over the prior art. As set forth in a later section of this paper, the other claims that have been rejected under section 102 are allowable at least by reason of their dependency on one or more of the claims whose patentability is specifically discussed herein.

The following describes, claim by claim, features that are not taught in the prior art.

Claim 1

Claim 1 has been rejected under section 102(e) as being anticipated by Matsumoto.

Claim 1 calls for a "concurrency value," and also calls for the number of media in the

writable state to exceed the concurrency value if no medium that is presently writable has space to store specified data. This feature is neither taught nor suggested by Matsumoto.

Matsumoto is directed to the process of "data striping." Data striping is a technique whereby serial data is divided into "stripe units" that can be stored on separate media. The separate media can then be mounted on different drives and read concurrently, thereby allowing the serial data to be recalled more quickly by leveraging the concurrent-read capability of a multi-drive media device. (See Matsumoto, col. 1, ll. 43-67.) Matsumoto addresses a very narrow problem that concerns data striping with sectorized media. In disk-shaped media (e.g., DVDs), tracks are generally divided into sectors, and one sector is typically reserved as a "substitute," which is used to store data in the event of a defect in one of the "regular" sectors. (See Matsumoto, col. 2, ll. 45-54.) Matsumoto notes that data striping cannot take place unless there is space available in the substitute sector of every medium involved in the data striping process, which means that if even one medium runs out of space, then the entire data striping process must be restarted from the beginning, which Matsumoto notes is inefficient and problematic. (See Matsumoto, col. 2, ll. 55-67.) Matsumoto is specifically directed to this problem involving data striping. As described in col. 4 of Matsumoto, Matsumoto takes advantage of a "management region" on each medium in order to solve the problem of running out of space in the substitute sector. Since each medium includes a management region which may contain redundant information, some of the management region can be used to store data from defective parts of the medium, thereby effectively increasing the size of the substitute sector.

With regard to the claimed feature of a "quantity of media ... in the writable state, said quantity of media being equal to the concurrency value," the examiner has read this

feature onto the six example media that are used simultaneously in Matsumoto. (See Office Action, p. 2). It appears that the examiner regards the claimed “concurrency value” itself as the number of media that can be used simultaneously in Matsumoto’s striping process. The Examiner then reads the act of “designating an additional one of said plurality of media as being in the writeable state whereby the aggregate number of media in the writeable state exceeds said concurrency value,” onto Matsumoto’s teachings of using the management region to supplement the capacity of the data sector. (See Office Action, p. 2). The Examiner’s reasoning, however, is incorrect. Using the management region of medium to supplement the capacity of the substitute sector simply makes use of space that is already on a medium, and does not increase the number of media in the writeable state. Thus, the act of using the management region to supplement the substitute sector’s capacity does not “designate an additional ... media as being in the writeable state.” Moreover, even if the number of media that can be used simultaneously in Matsumoto could be considered the claimed “concurrency number,” using the management region of a medium that is already being written does not cause the number of media in the writeable state to exceed the concurrency number. The use of the management region in Matsumoto does not designate a medium as being in the writeable state, and has absolutely no effect on the number of media in the writeable state.

Thus, claim 1 is not anticipated by Matsumoto, and applicants respectfully submit that the section 102(e) rejection of claim 1 must be withdrawn.

Claim 4

Claim 4 has been rejected under section 102(e) as being anticipated by Matsumoto. Claim 4 recites the existence of a device that has a library of media and a robotic mechanism that mounts media from the library onto the drives. Additionally, claim 4 calls for: “determining that none of said plurality of media in the writeable state located within said device has sufficient space to store said specified data.” The Examiner has read this feature onto Matsumoto’s teaching that the substitute sector on a medium may run out of space. (See Office Action, p. 5.) The Examiner’s interpretation implies that the substitute sector is a “medium” that lacks sufficient space. *A sector, however, is not a medium.* A sector is a region of a medium. The medium itself may have free space, even if the substitute sector on the medium is out of space.

Moreover, claim 4 calls for each medium to be storable in a library and mountable on a drive by a robotic mechanism. Substitute sectors are not stored in a library, and cannot be robotically mounted on drives. The Examiner’s attempt to read the media of claim 4 onto Matsumoto’s substitute sector is misplaced.

Additionally, claim 4, as amended, calls for “determining that none of said plurality of media located outside of said device is in the writeable state.” The Examiner reads this feature onto Matsumoto’s teaching that a user cannot designate the substitute sector for writing.” (See Office Action, p. 5.) It appears that the Examiner regards the substitute sector as a medium outside of the “device” (i.e., outside of the device that is associated with the drives, the library, and the robotic mechanism). This position is perplexing. First, as discussed above, the Examiner has already read Matsumoto’s substitute sector onto another portion of claim 4 that calls for media “within” the device. The same substitute sector cannot

be both “within” and “outside” the device. Second, as discussed above, a substitute sector is not a medium, but rather a portion of a medium. Third, even if one assumes that a substitute sector could be considered to be a medium that is either “within” or “outside” the device, the substitute sector would clearly be “within” the device. As clearly described at col. 5, l. 41 through col. 6, l. 37, Matsumoto’s media are located in a “media library apparatus” that includes both a drive device (41), a storage section (11), and a “transporter” (71) that physically moves media from the storage device to the drives. The data striping technique described in Matsumoto is concerned with the substitute sectors of media that are actually being written (i.e., media that are mounted on drives). The algorithm of Matsumoto has nothing to do with the substitute sectors of media that are outside of the library apparatus. Matsumoto’s technique does not determine anything about media that are located outside of a library apparatus (i.e., outside of the “device”), and thus Matsumoto cannot meet the above-quoted limitations of claim 4.

Thus, claim 4 is not anticipated by Matsumoto, and applicants thus respectfully submit that the section 102(e) rejection of claim 4 must be withdrawn.

Claim 12

Claim 12 has been rejected under section 102(e) as being anticipated by Matsumoto. Claim 12 recites that a set of media are identified that are in a “writeable” state, and then calls for:

- “determining that each of the media in said set is in use for the reading or writing of data”
- “determining that the number of said plurality of media in the writeable state

is greater than or equal to a first number”

- “waiting for a medium from said set to become available”.

Matsumoto does not teach or suggest these features. The Examiner has attempted to read these features onto Matsumoto’s teachings regarding management information regions and counters. As demonstrated below, Matsumoto’s management information regions and counters have nothing to do with the claim features quoted above.

Matsumoto teaches that the management region of a medium has a “counter” which is “incremented in its value by one each time data of the first or second management information region is loaded or unloaded, i.e., when such data is written or read to or from the medium.” (See Matsumoto, col. 7, ll. 1-4.) Matsumoto explains that each of the first and second management regions has its own counter, and at least one of the counters is updated each time a drive accesses the medium. The two counters may have identical values, but the values could differ if there are defects in the disk. Whenever information is written to a management region, it is always written to the region with the highest counter value (if one counter is higher than the other), and thus the management information region with the highest counter value always has the most up-to-date information. (See Matsumoto, col. 7, l. 55 through col. 8, l. 5.)

Matsumoto’s management regions and counter have nothing to do with the above-mentioned features of claim 12. The Examiner’s attempt to read these features onto Matsumoto is puzzling. In particular:

- The Examiner finds that the claimed act of “determining that each of the media ... is in use for the reading or writing of data” corresponds to Matsumoto’s teaching of “a determination ... as to which of the first and second management regions the latest

information is retained in” (see Office Action, p. 7). However, whether a medium’s latest information is contained in the first or second management region has nothing to do with whether the medium is in use for the reading or writing of data. A medium in Matsumoto can be in use regardless of which management region contains the latest information.

- The Examiner finds that the claimed act of “determining that the number of said plurality of media in the writeable state is greater than or equal to a first number” corresponds to Matsumoto’s teaching of “a comparison ... between the respective counters (first and second counters) of the first and second management information regions” (see Office Action, p. 7). However, comparing two counters is not the same as determining whether the number of media in the writeable state equals or exceeds a particular number. As described above, Matsumoto’s counters represent the number of times that a management information region is loaded or unloaded. Neither of Matsumoto’s counters represents the number of media in the writeable state, so the comparison of these two counters is not the same as the claimed comparison.

- The Examiner finds that the claimed act of “waiting for a medium from said set to become available” corresponds to Matsumoto’s teaching of “a determination ... as to which of the first and second management information regions the latest information is retained in.” The cited portion of Matsumoto is about finding which region contains the latest information, and says nothing about “waiting for a medium ... to become available” (or waiting for anything else to become available).

As demonstrated above, the cited portions of Matsumoto do not teach or suggest the features of claim 12. Thus, the section 102(e) rejection of claim 12 must be withdrawn.

Claims 17 and 18

Claims 17 and 18 have been rejected under section 102(e) as being anticipated by Matsumoto. Claim 17 recites the existence of a device that has a library of media and a robotic mechanism that mounts media from the library onto the drives, and further recites the feature of “determining that none of the media located in said library is in the writeable state.” Matsumoto does not teach or suggest this feature.

The examiner reads the above-quoted feature of claim 17 onto Matsumoto’s teaching that a substitute sector may run out of empty areas, in which case no more data can be written to the substitute sector. The Examiner’s position appears to be that it is possible for a substitute sector to be in a non-writeable state. However, as discussed above in connection with claim 4, a substitute sector is not a medium, cannot be stored in a library, and cannot be mounted onto a drive by a robotic mechanism. Thus, Matsumoto’s teaching that a substitute sector can be full does not teach the claimed feature of determining that media are not in a writeable state.

Similarly, claim 18 recites “determining that none of said plurality of media located outside of said device is in the writeable state,” and the Examiner has read this feature onto the above-mentioned portion of Matsumoto. Since a substitute sector is not a medium, the quoted feature of claim 18, likewise, is not taught or suggested by Matsumoto. Additionally, as described above in connection with claim 4, Matsumoto does not make any determination about media that are located outside of a library apparatus (i.e., outside of the claimed device), and thus for this additional reason Matsumoto does not teach the features of claim 18.

Accordingly, Matsumoto does not teach or suggest the features of claims 17 and 18, and the section 102(e) rejections of claims 17 and 18 must be withdrawn.

Claim 20

Claim 20 has been rejected under section 102(e) as being anticipated by Matsumoto. Claim 20 calls for various features that are clearly not taught by Matsumoto.

In particular, claim 20 calls for:

- (1) “determining that each of said media in said first set [i.e., the “first set” including those media that have a side in the writeable state] is in use for the reading or writing of data,”; and
- (2) “identifying a first one of said plurality of media which is not in use for the reading or writing of data, and which has a first side that is in the non-writeable state and a second side whose state is not designated”.

With regard to feature (1), the Examiner has read this feature onto Matsumoto’s teachings regarding the determination as to whether the first or second management region contains the latest data. This aspect of Matsumoto is discussed above in connection with claim 12. As noted in connection with claim 12, a management information region is not a medium, and whether the latest data is contained in the first or second management region has nothing to do with whether a particular medium is in use for reading or writing data.

With regard to feature (2), the Examiner has read this feature onto various portions of Matsumoto that relate to the labeling of sectors. For example, the portion of Matsumoto that the Examiner quotes teaches that the 81st sector of a disk mounted on the fourth drive may be referred to as “481”. (See Office Action, p. 10). This feature has nothing to do with whether a

medium has a “first side that is in the nonwriteable state,” as recited in claim 20. A technique for labeling media has nothing to do with whether a medium’s first side is in a nonwriteable state. None of the cited portions of Matsumoto teach that a medium may have two sides, that the two sides may have different states, or that a side may be in a state that is neither writeable nor non-writeable. It is thus clear that the cited portions of Matsumoto do not teach or suggest the features of claim 20.

Accordingly, the section 102(e) rejection of claim 20 must be withdrawn.

Claim 25

Claim 25 has been rejected under section 102(e) as being anticipated by Matsumoto. Claim 25 recites the feature of “identifying a second medium, said second medium not being designated as being in either the writeable state or the non-writeable state.” Matsumoto does not teach this feature. In particular, Matsumoto does not teach that a medium can exist in a state where it has not been designated as being either writeable or non-writeable. The Examiner has cited Matsumoto’s teachings that if “data has not been appropriately written, an affirmative ... determination is made ... and if there is an empty, i.e., available, area in the substitute sector region in the medium ... the processing proceeds ... to write the data into the substitute sector region.” (See Office Action, p. 12.) The quoted portion of Matsumoto does not say anything about a medium that is not designated as being in either a writeable state or a non-writable state. Whether data has been “appropriately written,” or whether there is an

empty area in the substitute sector, has nothing to do with a medium “not being designated as being in either the writeable state or the non-writeable state.”¹

Accordingly, Matsumoto fails to teach at least the above-quoted feature of claim 25, and the section 102(e) rejection of claim 25 must be withdrawn.

Claim 26

Claim 26 has been rejected under section 102(e) as being anticipated by Matsumoto. Claim 26 recites the feature of “waiting for [a] first medium to become available prior to writing said data to said first medium.” The Examiner has read this feature (see Office Action, p. 13) onto col. 8, lines 19-23 of Matsumoto, which states:

... the processing goes to step S10 after, at step S9, disconnecting, from the RAID controller, the drive device where is inserted the medium having the volume identifier that is different from those of the media in the other drive devices.

It is evident from the above quotation that this portion of Matsumoto has nothing to do with “waiting for [a] ... medium to become available.” The portion of Matsumoto cited by the Examiner clearly does not teach the features of claim 26.

Accordingly, the section 102(e) rejection of claim 26 must be withdrawn.

¹ As previously described, Matsumoto asserts that in the prior art a disk cannot be written to if its substitute sector is full. This fact may appear to suggest that the substitute sector being full implies that a disk is in the non-writeable state. However, even if one were to accept this line of reasoning, it should be noted that claim 25 does not call for a medium in the writeable state, or the non-writeable state, but rather a medium that is in *neither* state (i.e., “not being designated as being in either the writeable state or the non-writeable state”). Thus, even if Matsumoto could be said to teach a medium that is in the non-writeable state, it does not teach a medium that is in *neither* state.

Claim 32

Claim 32 has been rejected under section 102(b) as being anticipated by Blickenstaff. Claim 32 recites “a media management module [that includes] logic which selects said media based on a concurrency value.” Blickenstaff does not teach the use of a concurrency value.

The Examiner has read the claimed “concurrency value” (see Office Action, p. 15) onto col. 8, lines 51-53 of Blickenstaff, which teaches as follows:

The data management system software of the present invention manages the flow of data files throughout the system.

The above-quoted portion of Blickenstaff says nothing about “concurrency.” The *Microsoft Computer Dictionary* (5th ed. 2002) defines the related term “concurrent execution” as “[t]he apparent simultaneous execution of two or more routines or programs.” Moreover, the present application explains:

[T]he migration concurrency *M* is essentially a limit on the number of jobs that can be active at any given time

[Application, p. 15, lines 20-21.] In other words, “concurrency” – according to both the application itself and related dictionary definitions – refers to operations occurring in apparent simultaneity. A “concurrency value” is a number that quantifies how many operations can take place concurrently. The above-quoted portion of Blickenstaff says nothing about operations taking place concurrently, and thus does not teach or suggest the claimed concurrency value. Furthermore, claim 32 calls not merely for a concurrency value, but for the selection of media based on a concurrency value. There is no teaching in Blickenstaff (or in any other reference cited by the Examiner) that teaches that media can be selected based on a concurrency value.

Thus, Blickenstaff does not teach the features of claim 32, and the section 102(b) rejection of claim 32 must be withdrawn.

Claim 39

Claim 39 has been rejected under section 102(b) as being anticipated by Blickenstaff. Claim 39 recites the existence of a device that has a library of media and a robotic mechanism that mounts media from the library onto the drives, and further recites “logic which selects a medium based on which of said plurality of media is located in the library.” Blickenstaff does not teach or suggest this feature.

The Examiner addresses claim 39 on page 17 of the Office Action, although the Examiner has not specifically addressed the above-quoted feature of claim 39. It appears that the Examiner has overlooked this feature in formulating the rejection of claim 39. Blickenstaff does not appear to contain any teachings that correspond to this feature. While Blickenstaff mentions a device that includes “magnetic tape drives and robotic media storage and retrieval library systems” (col. 6, ll. 53-54), Blickenstaff contain no teaching that a medium is selected based on which media are in the library.”

Thus, claim 39 is not anticipated by Blickenstaff, and applicants respectfully submit that the section 102(b) rejection of claim 39 must be withdrawn.

Claim 40

Claim 40 has been rejected under section 102(b) as being anticipated by Blickenstaff. Claim 40 recites:

- “first data storage means for storing attributes of said media, said attributes

including ... whether each medium is double-sided, and whether each medium is robotically accessible”;

- “second data storage means for storing concurrency information”; and
- “media management means for choosing a medium to which to write ...

based on said attributes and said concurrency information”.

In other words, claim 40 requires that a medium on which to write is selected based on: (1) concurrency information, and (2) attributes indicating whether: (a) whether the medium is double-sided, and (b) whether the medium is robotically accessible. Blickenstaff does not teach the selection of media based on *any* of these factors.

As discussed above in connection with claim 32, Blickenstaff does not teach a concurrency value, and does not teach that media are selected based on anything having to do with concurrency. The portion of Blickenstaff cited by the Examiner (see Office Action, p. 18) refers to the selection of *data files to be migrated to media*, and does not mention the selection of *media*. While the portion of Blickenstaff mentions the word “concurrently,” this portion describes “concurrently operational ... rules,” which have nothing to do with selecting media based on concurrency information; this phrase simply means that two rules (which relate to the selection of files, not the selection of media) can both be applied at the same time. However, the fact that two rules can be concurrently operational does not mean that “concurrency information” is stored. While claim 40 and the quoted passage from Blickenstaff both use forms of the word “concurrent,” this superficial similarity is not sufficient to sustain a finding of anticipation, since the substance of claim 40 and Blickenstaff are markedly different.

Additionally, claim 40 calls for media to be selected based on whether a given medium is double-sided, and whether the medium is robotically accessible. The Examiner has cited column 6, lines 53-54 of Blickenstaff, which mentions the existence of a “robotic media storage and retrieval library system.” However, Blickenstaff says nothing about selecting a medium based on whether the medium is robotically accessible. Blickenstaff’s mere mention of the fact that robotic systems exist is not the same as selecting a medium based on whether the medium is robotically accessible. Moreover, Blickenstaff says nothing about selecting a medium based on whether the medium is double-sided.

Thus, claim 40 recites various features that are neither taught nor suggested by Blickenstaff, and applicants respectfully submit that the section 102(b) rejection of claim 40 must be withdrawn.

THE SECTION 103 REJECTIONS

Claims 5-6, 8-10, 13-16, 21-23, 27, 29, 30, 34, 36-38 have been rejected under various combinations of Matsumoto, Blickenstaff, Yamamoto, and Kaneko. Applicants set forth below the reasons why claims 5, 23, 29, and 38 are patentable over the prior art. As set forth in a later section of this paper, the other claims that have been rejected under section 103 are patentable at least by reason of their dependency on one or more of the claims whose patentability is specifically discussed herein.

The following describes, claim by claim, the reasons why claims 5, 23, 29, and 38 are not obvious over the prior art.

Claim 5

Claim 5 has been rejected under section 103(a) as being unpatentable over Matsumoto in view of Blickenstaff. Claim 5 recites the existence of a device that has a library of media and a robotic mechanism that mounts media from the library onto the drives. The crux of the rejection is that:

- (1) Matsumoto teaches the feature of “determining that none of said plurality of media in the writeable state located within said device has sufficient space to store ... specified data”; and

- (2) Blickenstaff teaches the feature of “determining that an amount of time has passed without [a medium located outside of the device] having been placed in said device”.

Regarding point (1), the Examiner has read the quoted claim feature onto Matsumoto’s teachings with regard to substitute sectors. The quoted claim feature is similar to a feature recited in claim 4, and, for reasons discussed above in connection with claim 4, Matsumoto’s teachings concerning substitute sectors do not apply to media located within a “device,” since substitute sectors cannot be stored in a library or robotically mounted to drives.

Regarding point (2), the Examiner (see Office Action, p. 21) has cited col. 5, lines 44-46 of Blickenstaff, which describe that when a user requests a file that has been migrated to storage media, the system may notify the user that there will be a delay in retrieving the file (since it takes longer to retrieve a file from storage media than from a local disk). However, this delay is not the same as the claim feature quoted in point (2). The quoted claim feature requires that some measurable amount of time has passed *without a medium having been placed in the device*. The delay mentioned in Blickenstaff may result from various factors.

There is no teaching in Blickenstaff that this delay results from a medium not having been placed in the device.

Finally, the Examiner's proposed reason for combining Matsumoto with Blickenstaff is incorrect. The Examiner asserts that Blickenstaff's "delay" should be combined with Matsumoto because "a time delay during the last access of data files signifies that no medium has been placed on the device." (See Office Action, p. 21). A time delay may be caused by various factors. Blickenstaff does not state that a time delay results from the failure to place a medium in the device, and thus even the proposed combination of Matsumoto with Blickenstaff does not yield the features recited in claim 5. In any event, claim 5 calls not merely for the failure to place a medium in the device, but for a determination as to how much time has passed without the medium being placed in the device. The Examiner has not even asserted that Blickenstaff teaches such a determination. Thus, even the proposed combination of Matsumoto and Blickenstaff does not yield the claimed invention.

Accordingly, applicants respectfully submit that claim 5 is not obvious over Matsumoto in view of Blickenstaff, and the section 103(a) rejection of claim 5 must be withdrawn.

Claim 23

Claim 23 has been rejected under section 103(a) as being unpatentable over Matsumoto in view of Kaneko. Claim 23 recites the existence of a device that has a library of media and a robotic mechanism that mounts media from the library onto the drives. Additionally, claim 23 calls for identifying a set of media that have a side in the writeable state and sufficient space to store a quantity of data, where each of the media in the identified

set is off-line – i.e., not in the devices library or on its drives. The crux of the rejection is that Kaneko teaches the feature of identifying such media.

The basis for this rejection is incorrect. While Kaneko does teach the use of a device that has a “magazine” of media that can be robotically mounted on the drives, Kaneko says nothing about identifying writeable media that are outside of the device. The portion of Kaneko that the Examiner cites (col. 6, ll. 31-37) is directed to the use of a magazine in a recording and playback device. The cited passage has nothing to do with identifying writeable media that are located outside of the device. Additionally, this feature is not taught in any of the references cited by the Examiner, and there is no reasonable basis to modify the references to yield this feature.

Thus, the above-quoted feature of claim 23 is not obvious over the prior art of record, and the section 103(a) rejection of claim 23 must be withdrawn.

Claim 29

Claim 29 has been rejected under section 103(a) as being unpatentable over Matsumoto in view of Kaneko. Claim 29 recites the following features:

- the media comprise double-sided media;
- each side of a medium is designatable as being in a writeable state or a non-writeable state;
- one of the media has a first side that is designated as being in the non-writeable state, and has a second side that is not designated as being in either state.

The crux of the section 103(a) rejection is that Kaneko teaches the above-described features of claim 29. In support of the rejection, the Examiner has cited column 2 of Kaneko,

wherein double-sided media are described. Applicants do not dispute that double-sided media themselves are in the prior art, and that such media are taught by Kaneko. However, Kaneko does not teach that each side of a medium can be designated as writeable or non-writeable, and also does not teach a medium whose first side is non-writeable and whose second side is not designated as being either writeable or non-writeable. Kaneko's general teachings regarding the existence and nature of double-sided media, as cited by the Examiner do not support the rejection of claim 29.

Moreover, the above-described features are not found in any of the prior art of record, and the Examiner has not proposed any extension or modification of the references that would yield the claimed feature.

Thus, claim 29 is not obvious over Matsumoto in view of Kaneko, and the section 103(a) rejection of claim 29 must be withdrawn.

Claim 38

Claim 38 has been rejected under section 103(a) as being unpatentable over Blickenstaff in view of Kaneko. Claim 38 recites that the media are double-sided, and that a medium is selected "based on which of said plurality of media has a side in the non-writeable state." The crux of the Examiner's rejection is that Blickenstaff teaches the feature of selecting a medium based on which of said plurality of media has a side in the non-writeable state. The portion of Blickenstaff that is alleged to teach this feature is col. 8, lines 51-53, wherein it is stated: "The data management system software of the present invention manages the flow of data files throughout the system." Managing the flow of data files is not the same

as selecting a medium based on whether a medium has a side in the non-writeable state. It is unclear why the Examiner believes that this phrase from Blickenstaff teaches this feature.

While Kaneko teaches the use of double-sided media (see Kaneko, col. 2, ll. 43-51), Kaneko does not teach that an individual side may be designated as being in either a writeable state or a non-writeable state. Additionally, the Examiner acknowledges that double sided media where each side can be in the writeable or non-writeable state is not taught in Blickenstaff, and the Examiner has not proposed any modification to the references that would yield this feature.

While the section 103(a) of Kaneko is based on a combination of Blickenstaff and Kaneko, the above-quoted feature of claim 38 is not taught in either of those references, and is not a reasonable extension of anything taught in those references (or of anything taught in the other references cited). Thus, claim 38 is not obvious over Blickenstaff in view of Kaneko, and the section 103(a) rejection of claim 38 should be withdrawn.

SUMMARY OF THE SECTION 102 AND 103 REJECTIONS

For the reasons discussed above, claims 1, 4, 5, 12, 17, 18, 20, 23, 25, 29, 26, 32, 38, 39, and 40 have been shown to be patentable over the prior art. Since this list includes all of the independent claims (1, 12, 20, 25, 32, and 40), all of the other pending claims are dependent, either directly or indirectly, on the claims that have been shown to define over the prior art. Therefore, the remaining claims are patentable at least by reason of their dependency. Thus, all pending claims are allowable over the prior art.

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Amendment to claims 5, 21 and 38

Claims 5, 21 and 38 have been amended to correct minor typographical oversights. The amendment to claims 5, 21 and 38 is not intended to affect the scope of the claim, and is not made for a reason related to patentability.

Drawings

Formal drawings were filed with the original application. No indication has been received as to the acceptance of the drawings. It is requested that the Examiner, in the next Office Action, indicate that the drawings are acceptable.

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CONCLUSION

As set forth above, all grounds for rejection of claims 1-40 have been traversed.

Applicants respectfully submit that this case is in condition for allowance, and request that the Examiner issue an early Notice of Allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Peter M. Ullman', is written over a horizontal line.

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